



3^d Weather Squadron

Integrity - Service - Excellence

FORECAST PERFORMANCE METRICS



**RGAAF Weather Station
February 2012**



Overview

- Monthly Weather Summary
- How do we measure our performance?
- Verification Statistics
- Flight Weather Briefings
- Weather Warnings

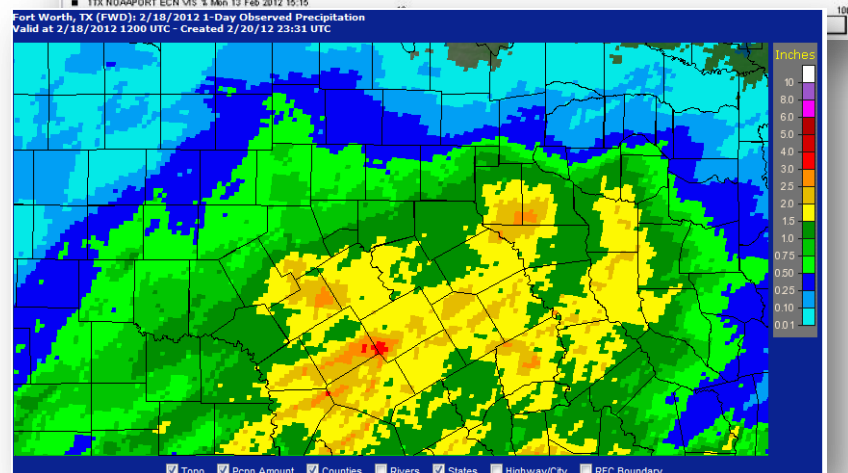
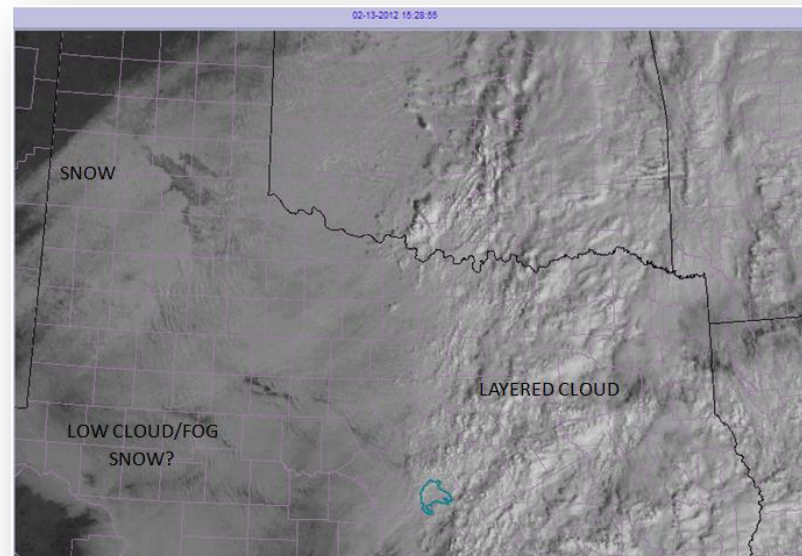




February 2012 Weather Summary

Overall, Feb was slightly warmer than normal with an avg daily max/min temp of 65/45 versus normal 62/42. We experienced only one truly winter-like day on 12 Feb when the high temp only climbed to 37 deg. Have to go back to 6 Dec 2011 to find another day we failed to make it out of the 30s. We received a trace of snowfall on the 12th--first snow this winter.

The big story was rainfall! We received nearly 3 1/2 inches for the month--nearly an inch above normal. A strong low pressure system brought two consecutive days of 1+ inches of rain 17-18 Feb.





How well are we forecasting mission impacting weather?

- Best measure of our performance is direct feedback from aircrews and other operators
 - Click on “Feedback Icon” on our flimsy; send an E-mail
 - Complete Flight Weather Briefing Feedback Form on our webpage or faxed with all DD175-1s
 - Call RGAAF weather station Flight Chief at 288-9166
- Please provide mission specifics:
 - Was weather forecast for your mission Go or No Go?
 - Was actual weather for your mission Go or No Go?
 - Was your mission altered or cancelled due to weather?
- We'll take good and bad comments!



How are we doing?
Your feedback is important to us!

Please circle the appropriate response, provide mission specifics, and enter any additional comments in Remarks.

1. Weather Forecast for your mission was: GO NO GO
2. Actual weather for your mission was: GO NO GO
3. Was your mission altered or cancelled due to weather? YES NO

4. Mission Details:
Aircraft Type: Call Sign/Tail #: Type Briefing: Brief/Debrief Time:
Remarks:

Please fax this form to the Weather Operations Center (RGAAF) Weather Station at 288-733-1100. Comment 288-9166 or send an e-mail to the Flight Chief.




Aircrew Feedback

- 1 Aircrew Briefing Form returned in **February**:

2012-02-24 09:21 P 2/2

MLB 2012



How are we doing?
Your feedback is important to us!

Please circle the appropriate response, provide mission specifics, and enter any additional comments in Remarks.

1. Weather Forecast for your mission was: ☒ GO ☐ NO GO

2. Actual weather for your mission was: ☒ GO ☐ NO GO

3. Was your mission altered or cancelled due to weather:
YES ☐ NO ☒

4. Mission Details:

Aircraft Type	Call Sign/Tail #	Type Briefing (DC178-1 or Verbal)	Brief Date/Time
1712	0273329	772	24 Feb 12

Remarks:

Good job
Very Professional

Please fax this form to the Weather Operations Center (RGAAF Weather Station) at DSN 738 1190 / Comm 254 288 1190 or send an E-mail to the Flight Commander: 1Lt Casey Christiansen: casey.a.christiansen.mil@mail.mil, or to the NCOIC: MSgt Faulds: gina.s.faulds.mil@mail.mil

**Please give us feedback—
good or bad!**
GIVE US PIREPS!



PIREPS

- We received **“2”** PIREPs from aircrews/ATC



Please call us!

**“Gray METRO - UHF 306.5
Help the next aircrew/mission!”**



Objective Method

- In addition to direct feedback we employ an objective method to measure (verify) our forecast performance:
 - We selected three key operational parameters:
 - Ceiling / Visibility < 1000 feet / 3 miles (*IFR*)
 - Ceiling / Visibility < 500 feet / 1/2 mile (*HLR Airfield Minimums*)
 - Thunderstorms (*Lightning Warning issued for Fort Hood*)
 - We measure the accuracy of each Fort Hood Reservation Forecast (Flimsy) published on the 3 WS web page
 - We use weather observations at GRK, HLR, GOP (Gatesville), and any PIREPs to verify each flimsy at the 3-, 6-, and 12- hour point from the original issuance time

CALL ME AT 800-276-8946 OR CALL 800-276-8946 FOR AN OFFICIAL FLIGHT WEATHER BRIEF											
34 WEATHER SPECIFICATION ELECTRONIC FORECAST #1						C		REVISION #			
FLIGHT DATE						TIME		PILOT/PILOT			
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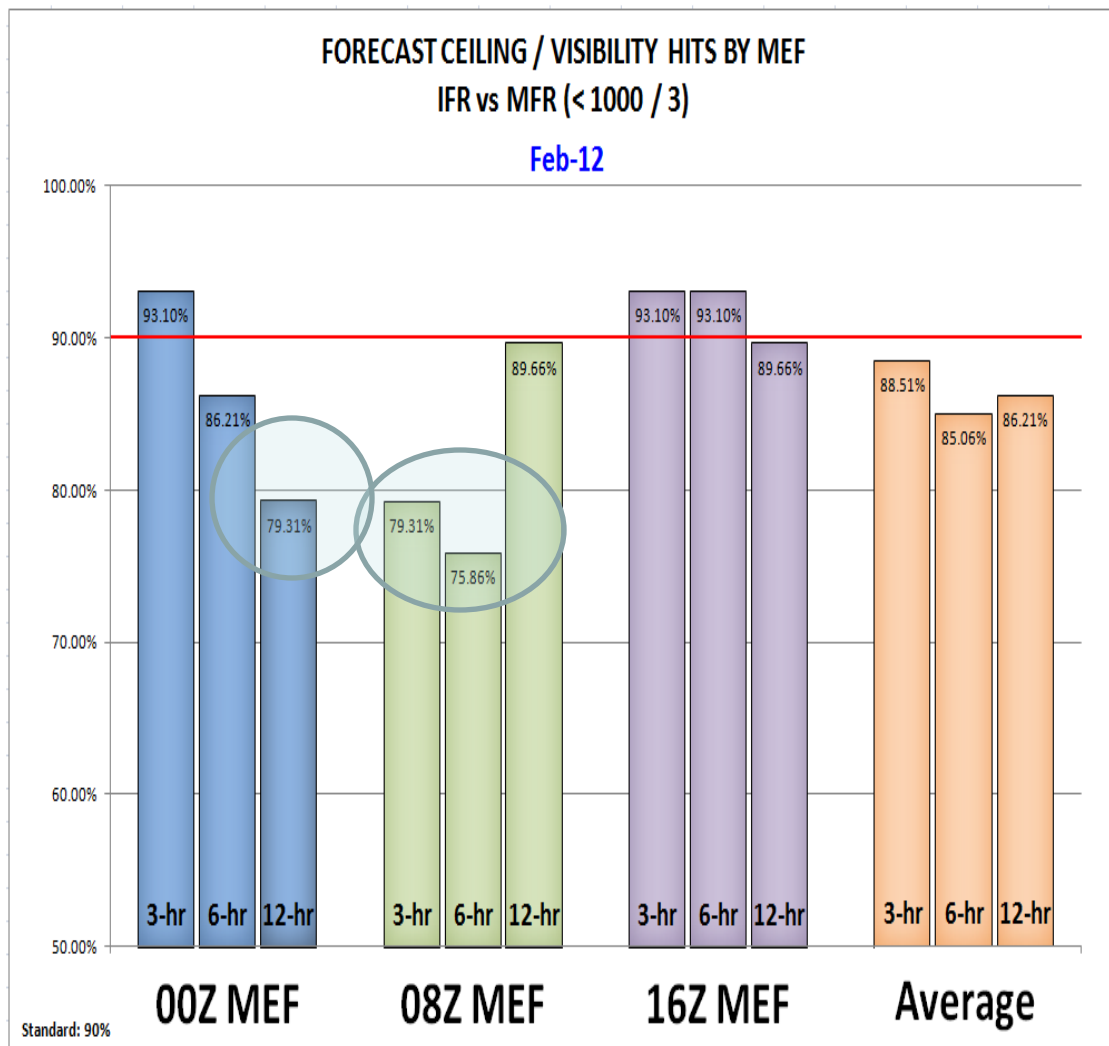
Did the Forecast or Weather Impact the Mission?

- Did we forecast “GO” weather for your mission and weather was “GO”--mission completed
- Did we forecast “GO” weather for your mission and weather was “NO GO”--mission cancelled or changed due to un-forecast weather
- Did we forecast “NO GO” weather for your mission and weather was “GO”--mission cancelled or changed due to forecast (*lost opportunity or needless change*)
- Did we forecast “NO GO” weather for your mission and weather was “NO GO”--mission cancelled or changed due to forecast/weather (*if inserted early in planning process this situation can prevent wasted time and enhance overall planning process*)



February 2012

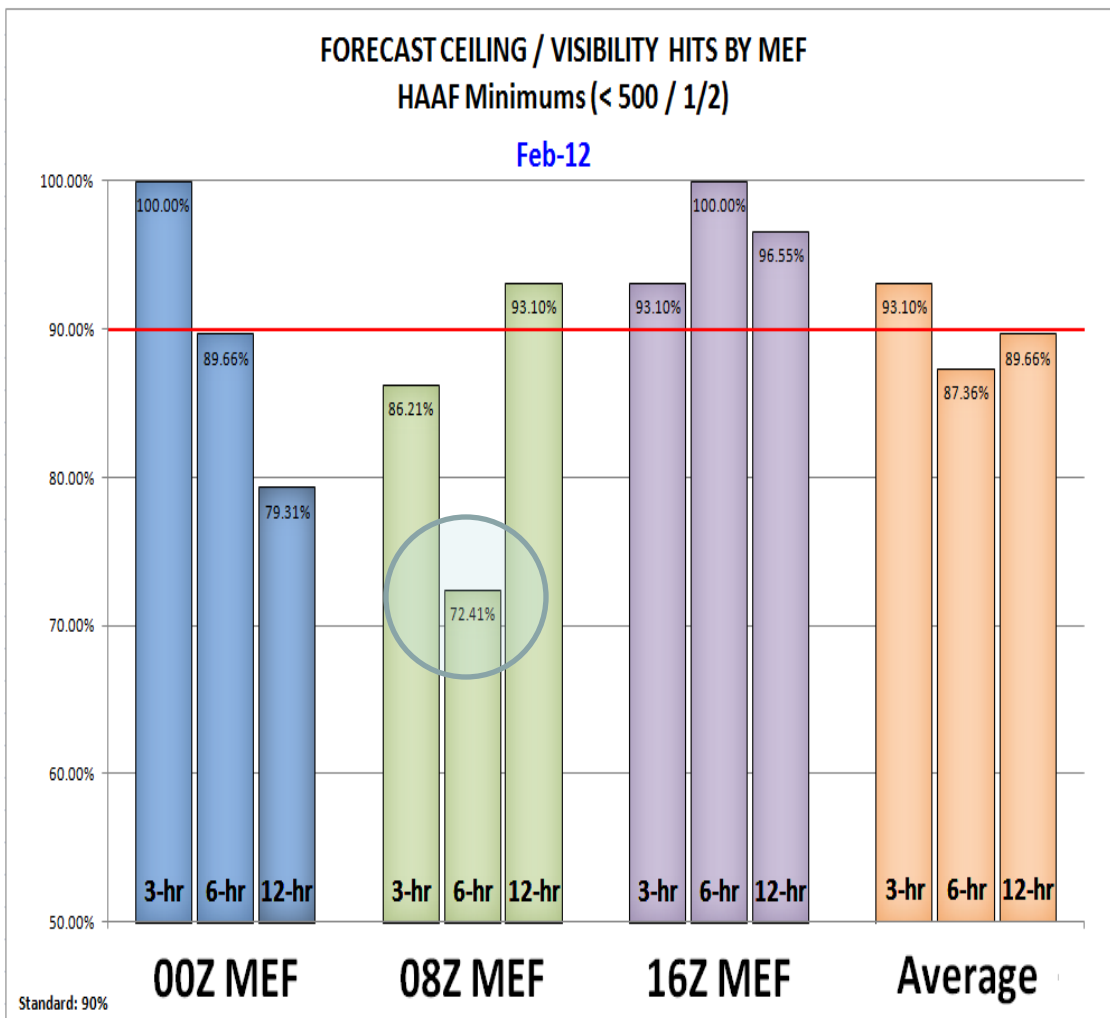
IFR vs VFR



- Very challenging month for forecasters and likely for planners/aviators too...
- 00Z MEF – 12-hr planning forecast on the surface looks low, but when it was actually IFR, we correctly forecasted it **80%** of the time, but trend was to slightly over-forecast IFR conditions the next morning in general on this flimsy
- 08Z MEF: Here we struggled...too often we forecasted “Go” for early morning flights only to have low stratus/fog move in--possible cancellations/delays?



February 2012 HAAF Minimum

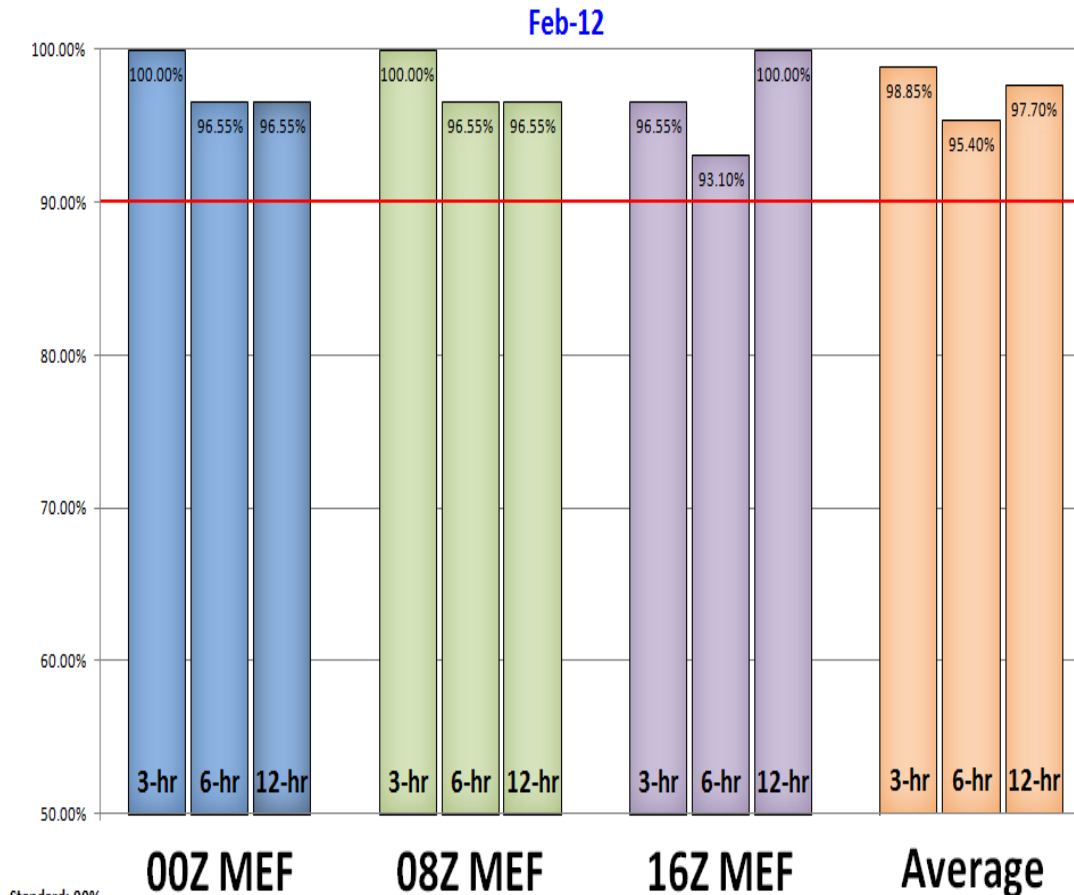


- Forecasting trend was to be too optimistic especially that early morning flimsy (08Z MEF) to forecast LIFR (below HLR mins < 500 / 1/2)
- When it was LIFR we correctly forecasted it only **38%** of the time--we failed to recognize the weather patterns that produced the lower conditions, but in nearly every occurrence we correctly forecasted IFR conditions



February 2012 Thunderstorms

FORECAST THUNDERSTORMS HITS BY MEF

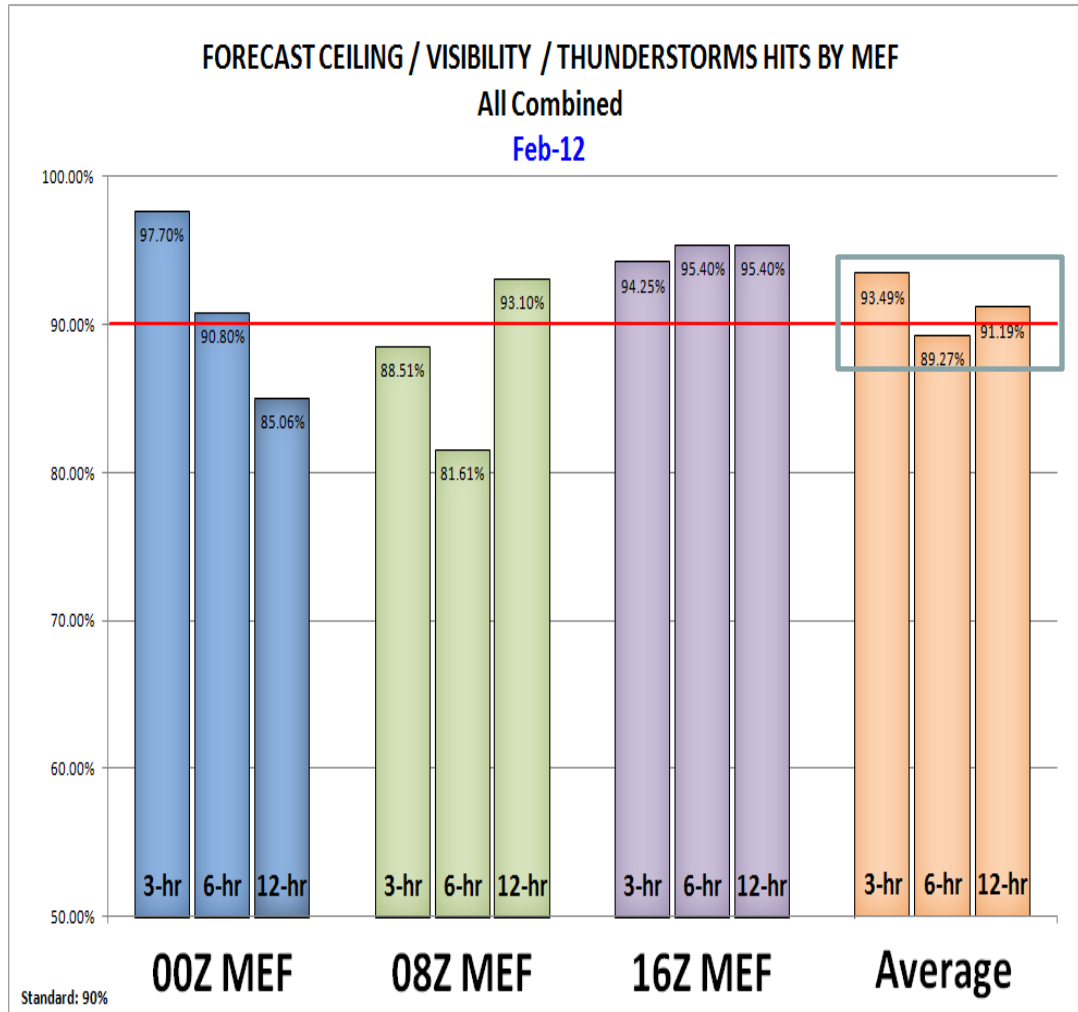


- *New parameter to better measure our forecast capability*
- *Thunderstorms on Fort Hood and subsequent Lightning Warnings have a larger impact during Summer months while low ceilings/visibilities occur more during Winter*
- Few thunderstorm events)—slight tendency to over-forecast
- In most missed forecasts, thunderstorms occurred in the LFA, but just not on the Fort Hood Reservation...



February 2012

All Combined

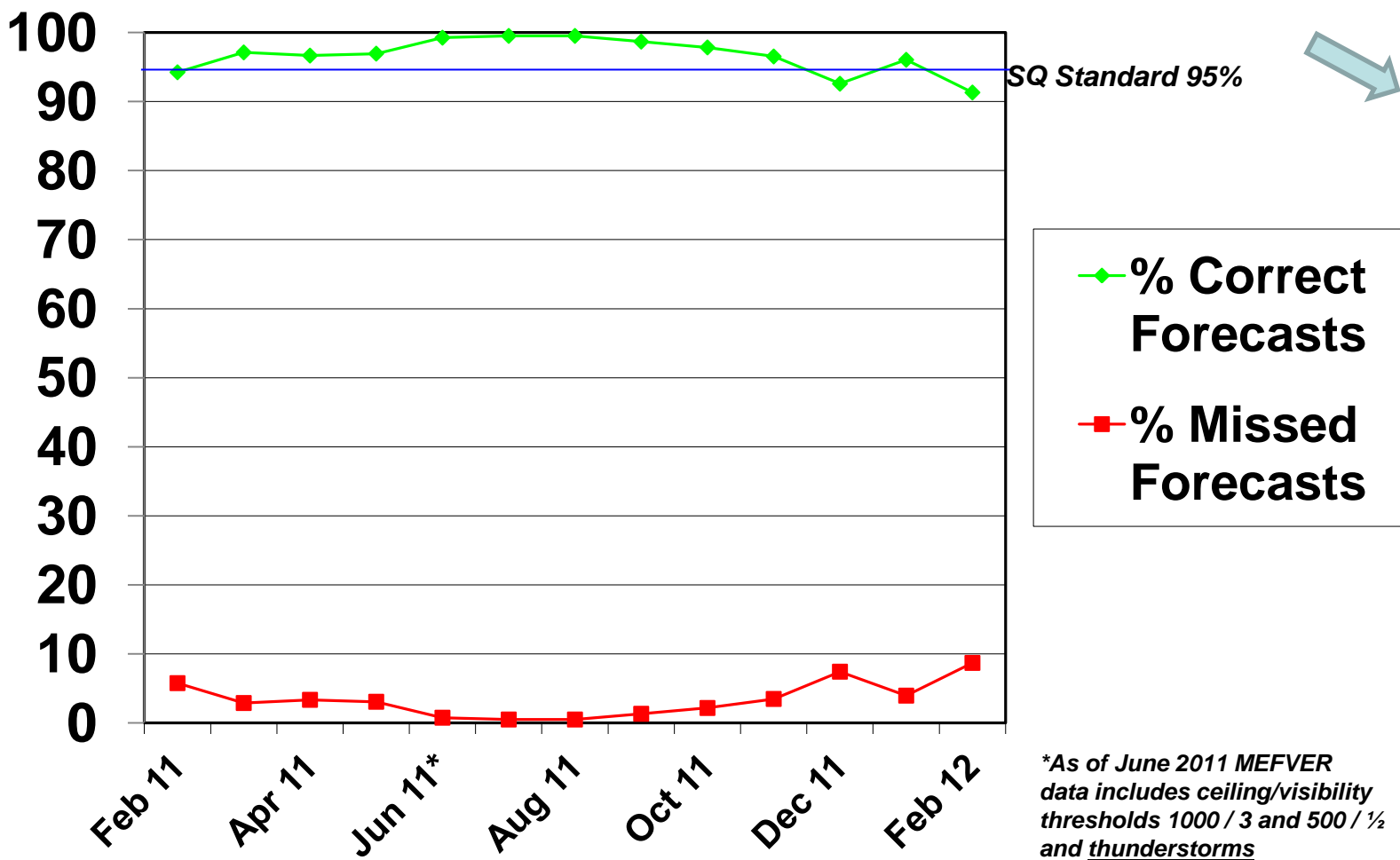


- Overall ~**91%** of all original forecasts (flimsys) correctly forecasted mission impacting weather (ceiling, visibility, and thunderstorms)

**Use our forecasts early in your planning process--they can prevent wasted time and enhance your overall flight/mission planning*



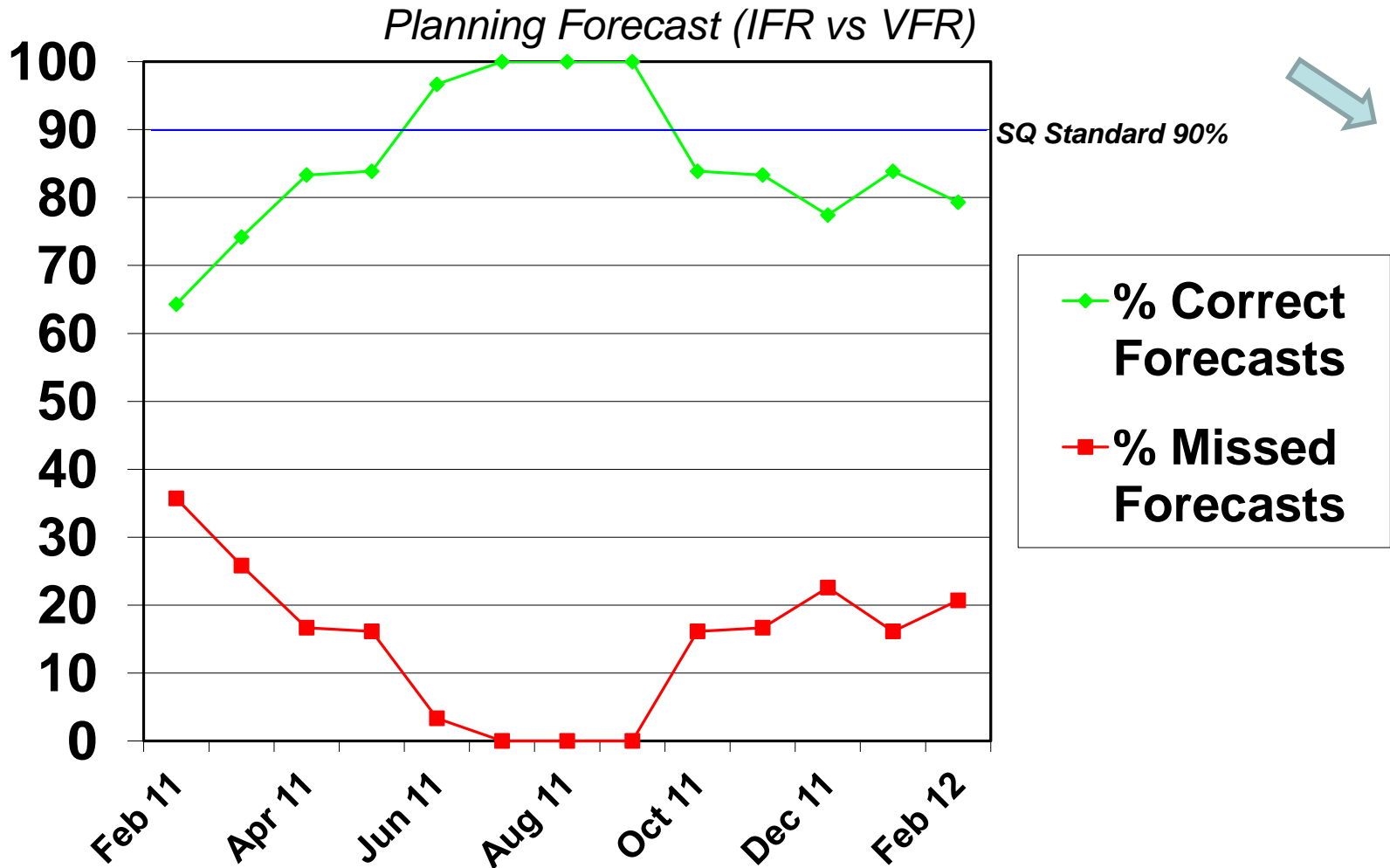
Overall MEFVER Trend





00Z MEF

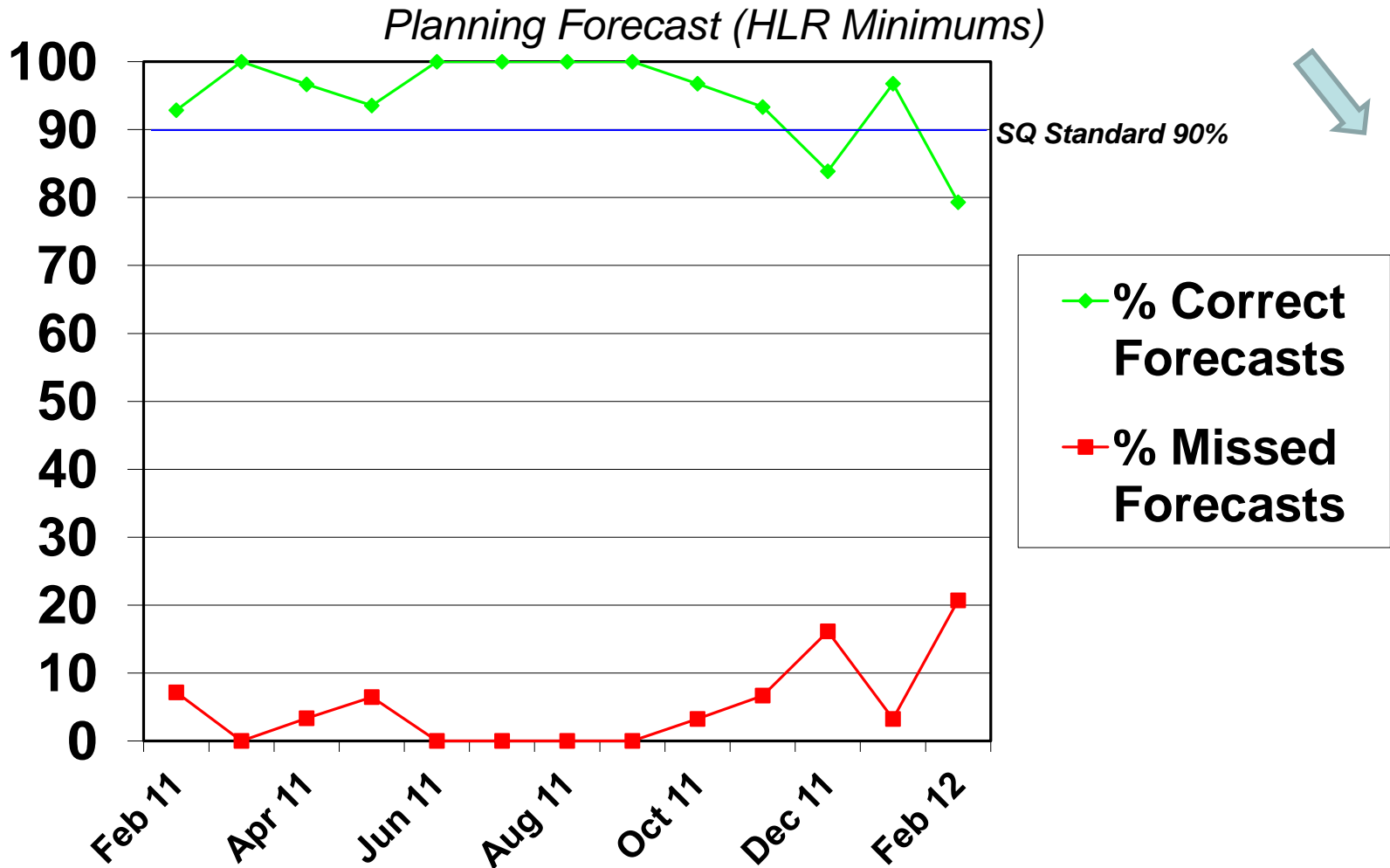
12-Hour IFR vs VFR Forecast Trend





00Z MEF

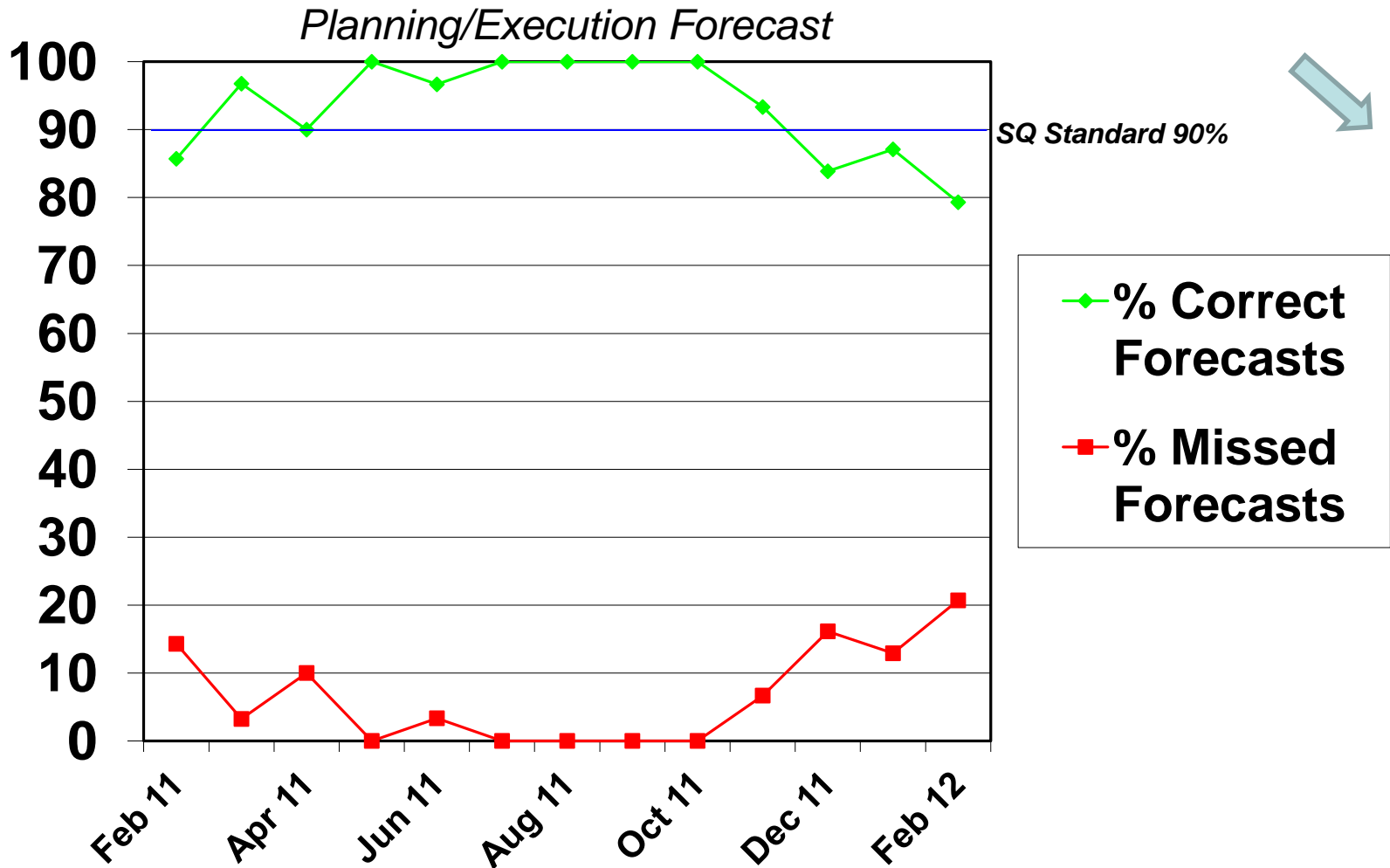
12-Hour **500** / ½ Forecast Trend





08Z MEF

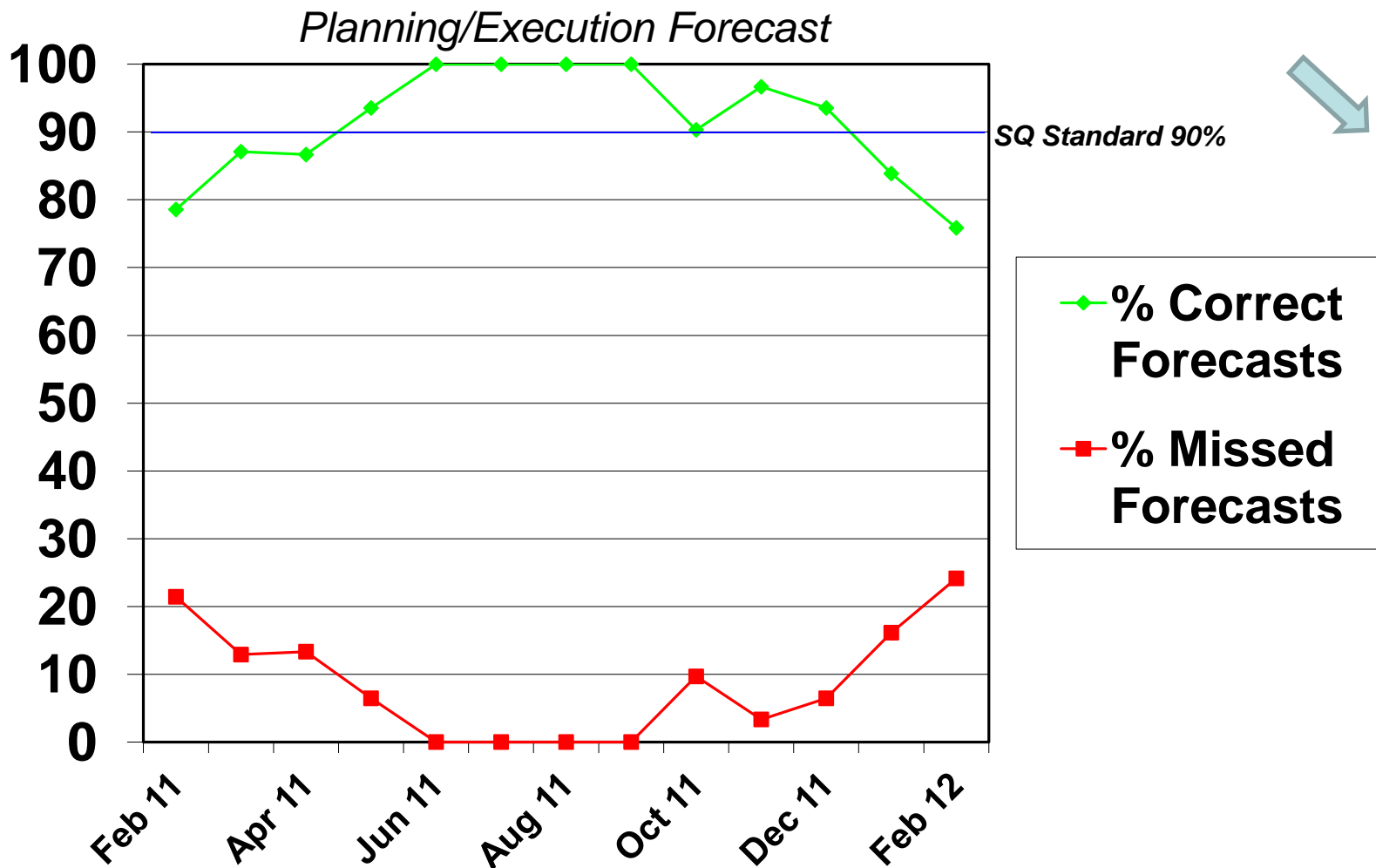
3-Hour IFR vs VFR Forecast Trend





08Z MEF

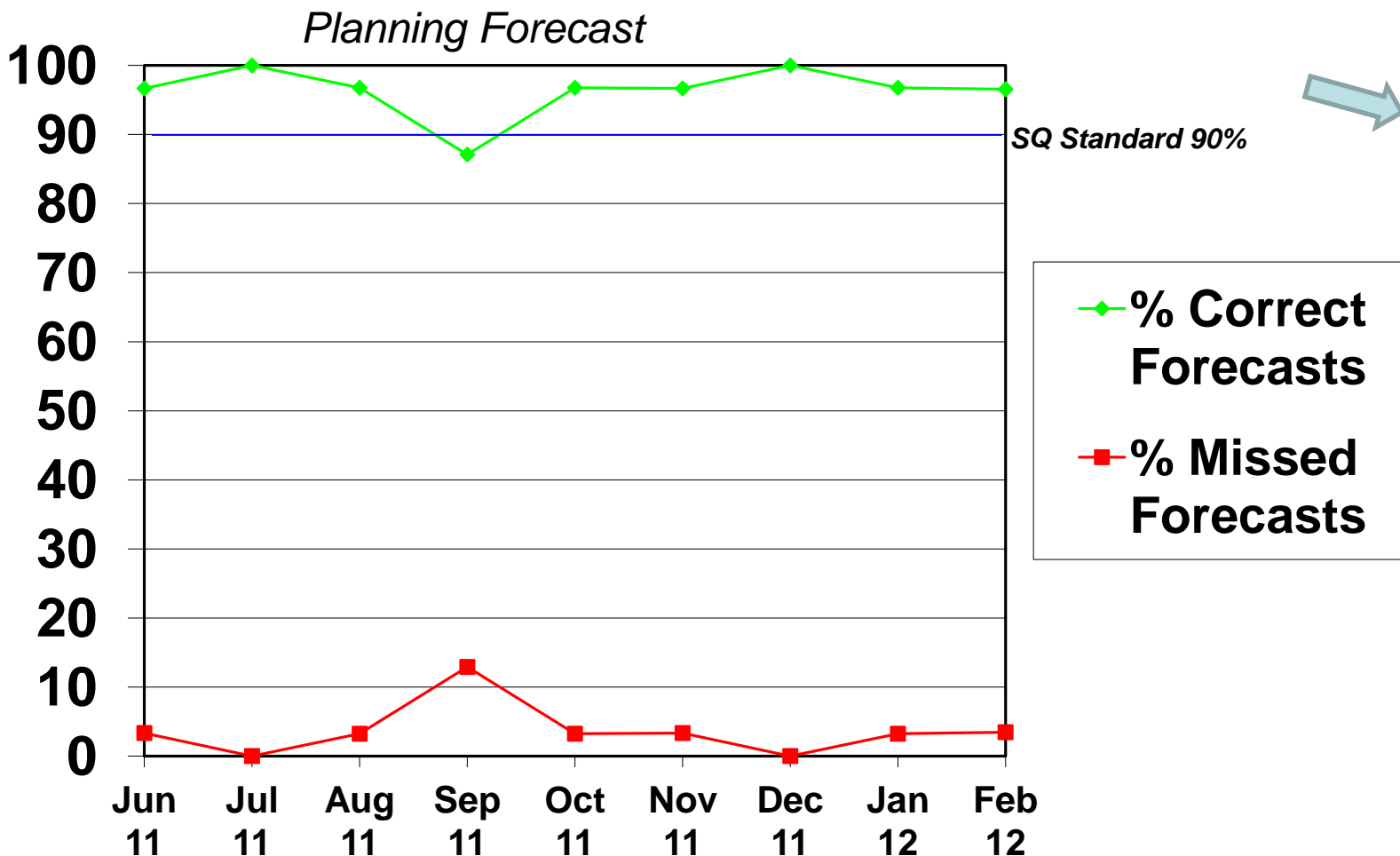
6-Hour IFR vs VFR Forecast Trend





08Z MEF

12-Hour Thunderstorm Forecast Trend

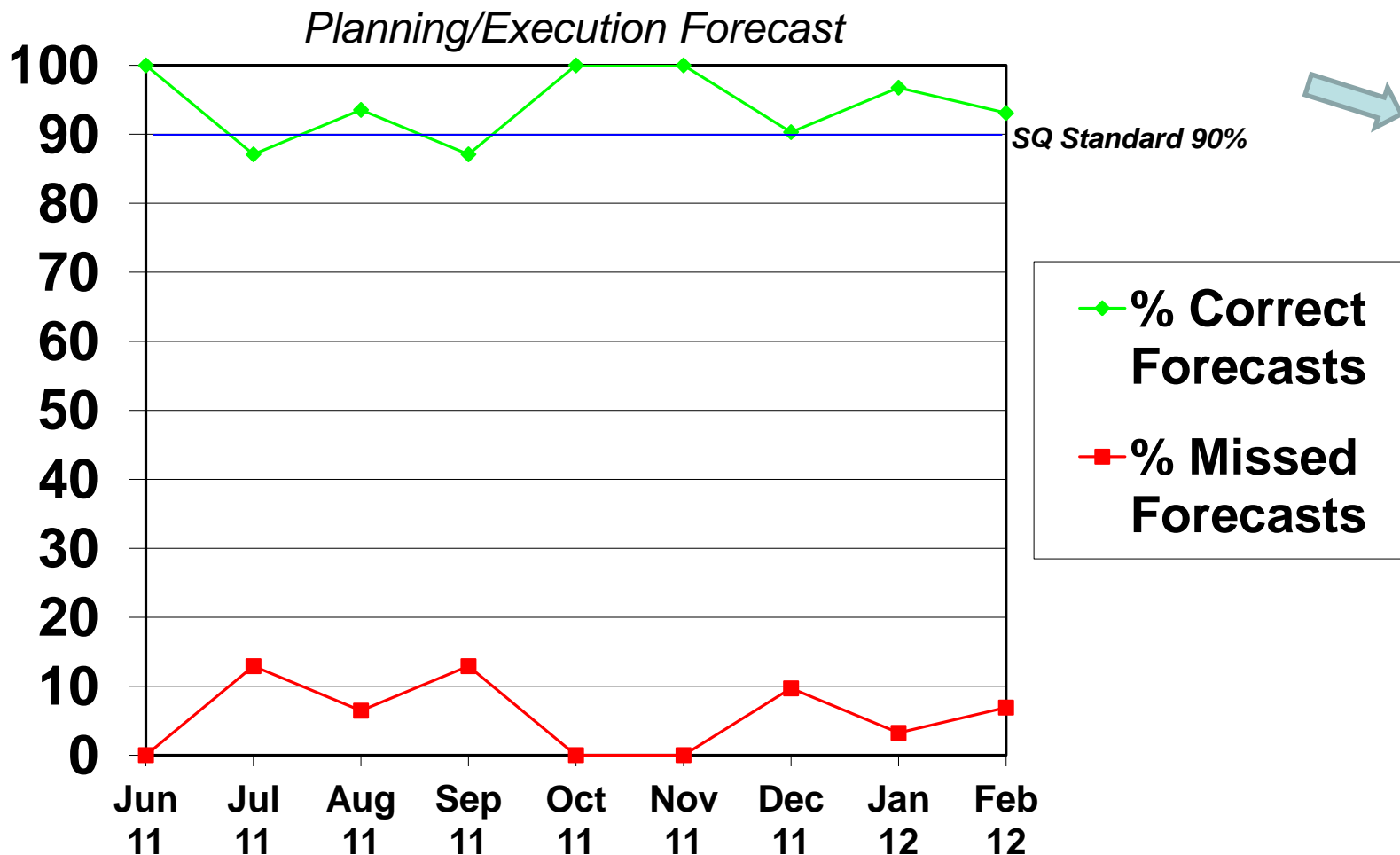


New metric criteria as of June 2011



16Z MEF

6-Hour Thunderstorm Forecast Trend



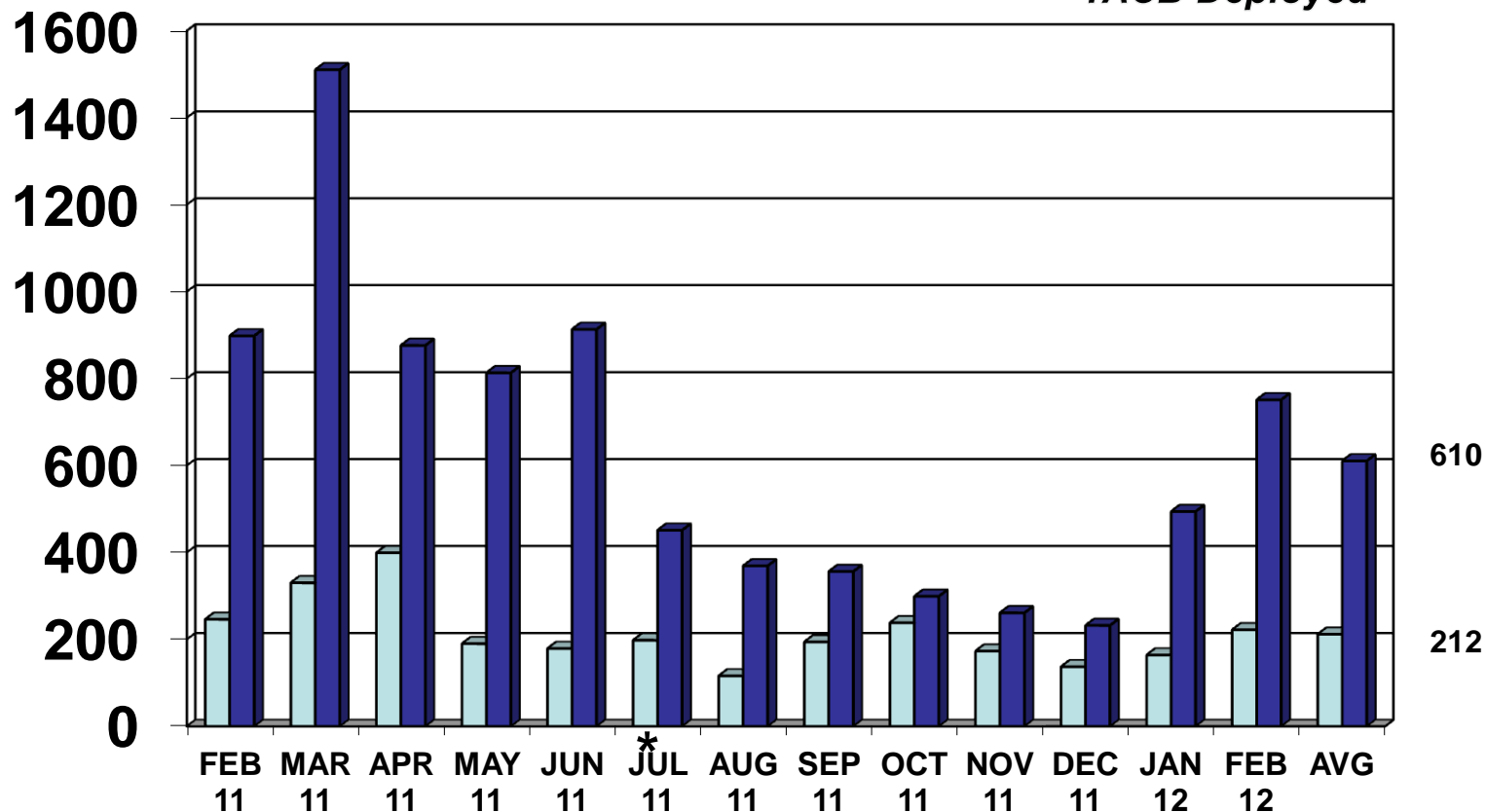
New metric criteria as of June 2011



Flight Weather Briefings

DD175-1 Verbal

**1ACB Deployed*



Average ~31 Aircrew Briefings per day in February



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26 OWS WARNVER – Fort Hood

IWWC – Feb 2012

Does not include extensions/amendments...

Criteria	Desired Lead-Time	Lead-Time	Remarks
High Wind $\geq 35 < 50$ kt	90 mins		False Alarm
Hail $\geq \frac{1}{2} < \frac{3}{4}$ inch dia	90 mins		False Alarm
Large Hail $\geq \frac{3}{4}$ inch dia	2 hours		False Alarm
Freezing Precipitation	90 mins		False Alarm
Heavy Rain ≥ 2 in/12hr	90 mins	+1:38	
High Wind $\geq 35 < 50$ kt	90 mins	+5:13	
High Wind $\geq 35 < 50$ kt	90 mins	+2:49	
High Wind $\geq 35 < 50$ kt	90 mins	0	



26 OWS WARNVER – Fort Hood

IWWC – Feb 2012

Does not include extensions...

WWA SUMMARY

Criteria	# Req	# Issued	# MDLT	# RBNI	Met 50% DLT	QPM	False Alarm Rate
Large Hail $\geq 3/4$ in	0	1	0	0	0	0	100%
High Wind $\geq 35 < 50$ kt	3	4	2	0	2	67%	25%
Hail $> 1/2$ in $< 3/4$ in	0	1	0	0	0	0	100%
Freezing Precipitation	0	1	0	0	0	0	100%
Heavy Rain ≥ 2 in/12hr	1	1	1	0	1	100%	0
TOTALS	4	8	3	0	3	75%	50%

*Great teamwork between 3 WS Forecasters (D Flight)
and
26 OWS (AF Regional Forecast Center)*

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26 OWS WARNVER – Fort Hood

IWWC – Feb 2012

Does not include extensions...

Lightning Watches **(Lightning within 5nm of Fort Hood Reservation)**

# Req	# Issued	# MDLT	# RBNI	QPM	False Alarm Rate
4	6	2	0	50%	33%

2 missed forecasts were issued with 0 lead-time...

Great teamwork between 3 WS Forecasters (D Flight)
and
26 OWS (AF Regional Forecast Center)

I n t e g r i t y - S e r v i c e - E x c e l l e n c e



3 WS WARNVER

IWWC – Feb 2012

Does not include extensions...

Western Training Area (WTA) - Thunderstorm Watches

# Req	# Issued	# MDLT	Met 50% DLT	# RBNI	QPM	False Alarm Rate
5	7	1	3	0	20%	29%

Observed Weather Advisories Issued:

-3 LLWS

-4 Wind Speed \geq 30KT



Questions?

**Please contact
the current
RGAAF Weather Station
Flight Commander
at
288-9166/288-4339
or E-mail:**

cacey.a.christiansen.mil@mail.mil